


# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PU030014	<b>FOR FURTHER ACTION</b>		See Form PCT/PEA/416
International application No. PCT/IB2004/000672	International filing date ( <i>day/month/year</i> ) 09.01.2004	Priority date ( <i>day/month/year</i> ) 09.01.2003	
International Patent Classification (IPC) or national classification and IPC H04L12/28			
Applicant BICHOT, Guillaume et al			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 9 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> <i>sent to the applicant and to the International Bureau</i> a total of 2 sheets, as follows:</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand  09.11.2004		Date of completion of this report  22.04.2005	
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer  Harrysson, A  Telephone No. +49 89 2399-7529	



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ON PATENTABILITY**

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

**Description, Pages**

1-9 as originally filed

**Claims, Numbers**

1-11 as originally filed

**Claims, Pages**

1-11 filed with telefax on 31.03.2005

**Drawings, Sheets**

1/5-5/5 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☒ the claims, Nos. 1,2,4
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	
	No: Claims	1-11
Inventive step (IS)	Yes: Claims	
	No: Claims	1-11
Industrial applicability (IA)	Yes: Claims	1-11
	No: Claims	

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

**Concerning point V (reasoned statement)**

- 1) The various definitions of the method and apparatus given in independent **claims 1, 2, 11** (method), **4, 5 and 7** (apparatus) are such that the claims as a whole are **not concise**. Moreover **lack of clarity** of the claims as a whole arises, since the plurality of independent claims makes it difficult, if not impossible, to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection.

Hence the claims do **not** meet the requirements of Article 6 PCT.

In order to overcome this objection, the claims should be recast to include only the **minimum** necessary number of **independent claims** in each category. In the present case only **one** independent claim in the method and apparatus category respectively is considered appropriate.

- 2) In **claim 2**, it is not clear what is meant by "receiving digital packets embedded in a program". In **claim 9** it is not clear what is meant by "a downstream service".

According to PCT Guidelines 5.31 the claims should be clear from the wording of the **claims alone**.

In **claim 10** the reference to a wireless communication standard is **not clear** (Article 6 PCT) since the reader is left in doubt of which standard is referred to. Further it is not clear which period of a standard is meant. The period should be defined in concrete technical terms instead of a reference to a document since the features of the invention should be self-contained and no particular document identifying said period has been provided, see PCT Guidelines 4.26. Further, the term "the duration" in claim 10 has **no unambiguous antecedent**.

Claims 2, 10 and 11 do thus **not** fulfil Article 6 PCT.

- 3) The amendments filed with the telefax of 31.03.2005 appear to introduce subject-matter which extends beyond the content of the application as filed which contravenes Article 34(2)(b) PCT.

In **claim 1**, the amendment "communicating the duration in the DIFS interval" is **not** considered to be allowed under Article 34(2)(b) PCT, since "DIFS interval" or the general principle of communicating the duration in an interval has **not been found** in the application as originally filed. Further, in the description page 8 line 8 "DIFS" is explained as "a duration ID field" while in the drawings, figure 4, it is defined as "distributed inter frame space". This inconsistency leads to **uncertainty** (Article 6 PCT) regarding the meaning of "DIFS" or "DIFS interval".

The same objection applies also to **claims 2 and 4** regarding the passages "receiving the computed duration in a DIFS interval" in claim 2 and communicate the duration in a DIFS interval in claim 4.

Claims 1, 2 and 4 are thus not allowed under Article 34(2)(b) PCT. For the purpose of examination, the passage "in ... DIFS interval" in each claim mentioned above has been disregarded.

- 4) The following documents from the international search report are referred to in this examination report:
- D1: US-A-5 231 634
  - D2: US 2002/163933 A1 (BENVENISTE MATHILDE) 7 November 2002 (2002-11-07)
  - D3: US 2002/071448 A1 (CERVELLO GERARD ET AL) 13 June 2002 (2002-06-13)

The following document was not cited in the international search report. A copy of the document is annexed to the communication:

D4: XP10614108

- 5) With respect to **claim 1**, document **D4** (see in particular page 2150 left column lines 4-33) discloses (any references in parentheses applying to this document) a method for reducing contention conflicts in a broadcast/multicast wireless network (see in particular column 3 at lines 23-33), comprising the steps of:
- a) coordinating by an access point, AP, a contention-free communication by the

- AP (see in particular page 2150 left column lines 7-11, 20-27);
- b) coordinating by computing a time duration and communicating the duration to one or more wireless stations (implicit, since in page 2150 left column lines 7-11, 20-27 it is disclosed that a value of a duration field is broadcast from the AP, said value being set by the AP);
  - c) coordinating such that a communication stream to at least one of the wireless stations is uninterrupted for the duration (see in particular page 2150 left column lines 7-11, 20-27);
  - d) using the duration information to control a counter in a wireless station to prevent the wireless station from attempting to transmit for a predetermined period of time (see in particular page 2150 left column lines 7-8, 20-27).

The document **D4** thus either explicitly or implicitly discloses **all** features of **claim 1** and the subject-matter of said claim is therefore **not novel** (Article 33(1) and (2) PCT).

Furthermore, it is pointed out that should the applicant dispute the aforementioned novelty objection based on minor differences of interpretation between some of the features of **claim 1** and the features of **D4**, the subject-matter of said claim would **not involve an inventive step** (Article 33(1) and (3) PCT), with regard to the disclosure of document **D4** and the normal knowledge of a **person skilled in the art** of medium access control for wireless LANs.

- 6) Independently from the above objection regarding claim 1, it is noted that document **D1** (see in particular abstract; column 1 at lines 7-13, 43-50; column 3 at lines 3-58; column 6 line 57 - column 7 line 3; Table 2) discloses (any references in parentheses applying to this document) a method for reducing contention conflicts in a broadcast/multicast wireless network (see in particular column 3 at lines 23-33), comprising the steps of:
- a) coordinating by a first station a contention-free communication by the first station (see in particular column 3 at lines 3-22);
  - b) coordinating by computing a time duration and communicating the duration to one or more wireless stations (see in particular column 3 at lines 34-42);
  - c) coordinating such that a communication stream to at least one of the wireless

- stations is uninterrupted for the duration (see in particular column 3 at lines 54-58);
- d) using the duration information to control a counter in a wireless station to prevent the wireless station from attempting to transmit for a predetermined period of time (implicit from D1, see in particular "reservation timer" in table 2).

Present **claim** differs from document **D1** only in that said claim additionally defines the first station being an access point.

The **subject-matter distinguishing claim 1** of the present application from the subject-matter of document **D1** can **not** be considered as **involving an inventive step** (Article 33(1), (3) PCT) since D1 discloses the same type of solution as present claim 1 and D1 is directed to broadcast wireless LANs (see column 6 line 57 - column 7 line 3). Since it is well known by the skilled person that access points can be one of the nodes in a peer-to-peer communication according to claim 1, and further since D1 already discloses not just peer-to-peer communication but also broadcast (see column 6 line 57 - column 7 line 3), the use of access points in the system of D1 is considered as an obvious design alternative by the skilled person being aware of the teachings of D1. The skilled person **would** therefore, when starting from document D1, **without the exercise of inventive skill**, arrive at the subject-matter of claim 1.

The subject-matter of **claim 1** does thus **not involve an inventive step** (Article 33(1), (3) PCT).

The same inventive step objection apply with regard to cited document **D2**, see sections 0042-0043, 0076 or **D3**, see sections 0014, 0022-0024.

- 7) The above objections put forward in sections 5 and 6 apply also to independent **claims 2 and 11**, which define similar methods as the method defined in independent claim 1. As a consequence the subject-matter of **claims 2 and 11** is also **neither novel** (Article 33(1), (2) PCT) **nor does it involve an inventive step** (Article 33(1), (3) PCT).
- 8) The above objections put forward in sections 5 and 6 apply also to independent

**claims 4, 5 and 7**, which essentially define devices for performing the method defined in independent claim 1. As a consequence the subject-matter of **claims 4, 5 and 7** is also **neither novel** (Article 33(1), (2) PCT) **nor does it involve an inventive step** (Article 33(1), (3) PCT).

- 9) The **dependent claims 3, 6, 8-10** are either so unclear that no examination was carried out (claim 10) or do **not** contain any additional features which, in combination with the features of any claim to which they refer, **involve an inventive step** (Article 33(1), (3) PCT) for the reason that the subject-matter of said claims **either** is in principle directly derivable from the disclosure of document **D4** (page 2150 left column lines 4-33), **D1** (see in particular abstract; column 1 at lines 7-13, 43-50; column 3 at lines 3-58, Table 2), **D2** (see in particular abstract; sections 0009, 0042-0043, 0070, 0076) or from document **D3** (see in particular abstract; sections 0014, 0022-0024), **or** represents minor design details which are based on the normal knowledge of a person skilled in the art of mobile telephone networks.

Particularly, the subject-matter of:

- **claims 3 and 6** relating to NAV is found in **D4** (see in particular page 2150 left column line 22);
- **claims 8 and 9** has already been elaborated in **sections 5-6** above.

Thus the dependent **claims 3, 6, 8-10** do not fulfil the requirements of either Article 33(1)-(3) or Article 6 PCT.

#### **Further Remarks**

- 10) The applicant should have taken the opportunity to attend to the following points regarding defects in form or content.
- a) The independent claims should have been drafted in the proper **two-part form** recommended by Rule 6.3(b) PCT, having a preamble that correctly reflects the nearest prior art, presumably that represented by document D1. If the applicant considers two-part form inappropriate in accordance with PCT Guidelines 5.06-5.08, he is invited to provide reasons in his reply and also ensure that it is clear from the description which features defined by the independent claim are known from the prior art, PCT Guidelines 5.08.



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- b) According to Rule 6.4(c) PCT and PCT Guidelines 5.17 the dependent claims must be **grouped together** to the extent and in the most appropriate way possible, which is not the case with claim 3. A renumbering of the claims should have been performed.
- c) To increase their intelligibility, all the claims should have been redrafted to include **reference signs** in brackets where features shown in the **drawings** are referred to, Rule 6.2b PCT. This applies to both the preamble and characterising portion, PCT Guidelines 5.11.
- d) Statements as "spirit" or the like on the last page of the description are unclear and should have been deleted according to PCT Guidelines 5.30.
- e) The drawings should have been redrafted in order to fulfil Rule 11 PCT.
- f) In order to meet the requirements of Rule 5.1(a)(ii) PCT, the **relevant prior art** documents D1 and D4 should have been acknowledged by reference and briefly discussed in the introductory part of the **description**. Alternatively, if the applicant is aware of a document disclosing the art mentioned in the introductory part of the description, such a document should have been explicitly named. A copy of such a document should preferably also have been provided for the office.

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CLAIMS

1. A method for reducing contention conflicts in a broadcast/multicast wireless network comprising the steps of: coordinating by an access point a contention-free communication by the access point by computing a time duration and communicating the duration in the DIFS interval to one or more wireless stations such that a communication stream to at least one of the wireless stations is uninterrupted for the duration, wherein the duration information is used to control a counter in a wireless station to prevent the wireless station from attempting to transmit for a predetermined period of time.

2. A method for reducing contention conflicts in a broadcast/multicast wireless network between a wireless station and an access point comprising the steps of: receiving digital packets from an access point embedded in a program, receiving a computed duration in a DIFS interval for transmission of a plurality of broadcast/multicast frames, controlling a network allocation counter in response to the computed duration, and receiving a communication stream that is uninterrupted for the duration in response to the state of the network allocation counter.

3. The method in Claim 1 further including the step of: imbedding at least one Network Allocation Vector duration information in an IEEE 802.11 compliant data packet for transmission of an uninterrupted plurality of the broadcast/multicast frames to wireless stations to reduce contention conflicts among IEEE 802.11 compliant wireless stations.

4. An access point that receives digital packets embedded in a transmission stream comprising: a means to receive digital packets; a means for computing a duration for transmission of a plurality of broadcast/multicast frames, the duration controlling a network allocation counter in a plurality of devices associated with a wireless network; a means to communicate the duration in a DIFS interval to one or more wireless stations in a header packet to reduce contention conflicts among the wireless stations.

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5. An access point that receives digital packets embedded in a transmission stream comprising: a network allocation counter; a means for receiving duration for transmission of a plurality of broadcast/multicast frames of a video frame transmission for downlinking an uninterrupted plurality of broadcast/multicast frames; and means for controlling the network allocation counter in response to the duration, and controlling attempts to access the network in response to the network allocation counter.

6. The access point according to claim 5, wherein the network allocation counter corresponds to an IEEE 802.11 compliant NAV.

7. An access point that receives digital packets embedded in a transmission stream comprising a node that retains control of a medium by fixing a duration field and whereby the node can adjust the duration field to release the medium.

8. The access point of Claim 7, wherein the node can fix a duration to hold the medium until the node decides to release the medium.

9. The access point of Claim 7, wherein the node permits bandwidth provisioning in the node in order to provide QOS for a downstream service.

10. The access point of Claim 7, wherein the duration is the largest possible period, in accordance with a wireless communication standard.

11. A method for reducing contention conflicts in a broadcast/multicast wireless transmission comprising the steps of coordinating by an access point in a first cell a contention-free session, each said contention-free session including multiple transmissions with other member stations in the first cell, using interframe spaces of sufficient duration such that a single duration during a session delivers the broadcast/multicast information in a single communication stream eliminating the requirement for contending for the medium for each broadcast/multicast frame transmission.

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